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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,750	02/23/2004	Frank Dimeo JR.	2771-546 CIP 2	2238
23448 7590 05/15/2008 INTELLECTUAL PROPERTY / TECHNOLOGY LAW PO BOX 14329 RESEARCH TRIANGLE PARK, NC 27709				
EXAMINER				
SAINT SURIN, JACQUES M				
ART UNIT		PAPER NUMBER		
2856				
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05/15/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/784,750

Applicant(s)

DIME ET AL.

Examiner

J M. SAINT SURIN

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/21/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43, 46 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-32, 35-38, 46 and 47 is/are allowed.
- 6) ☒ Claim(s) 33, 34 and 39-43 is/are rejected.
- 7) ☒ Claim(s) 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date 02/08/01/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is responsive to the amendment of 01/09/08.

Response to Arguments

2. Applicant's arguments with respect to claims 1-43 and 46-47 have been considered but are moot in view of the new ground(s) of rejection.
3. The affidavit of 01/09/08 overcomes the 102 (e) rejection applied over claims 1-21, 25-39 and 41-46.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claim, 39 and 41-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Takami et al. (US Patent 4,415,877).

Regarding claim 39, Takami discloses a gas sensor assembly comprising a gas sensing element comprising a nickel-copper alloy (see: col. 5, lines 11-16 and col. 6, lines 11-14).

Regarding claims 41-42, Takami discloses the semiconductor made of the sintered oxide (hereinafter referred to as "an oxide semiconductor") is made porous to increase the gas sensing ability. Therefore, CO and HC in the exhaust gas enter the porous semiconductor and come in contact with the platinum metal electrodes, and carbon is deposited by their catalytic reaction (col. 1, lines 30-36).

6. Claim 43 is rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. (US Patent 6,923,054 B2).

Regarding claim 43, Liu discloses a gas sensor assembly (10, col. 4, lines 39-42) comprising a support structure (col. 3, lines 46-54 and col. 5, lines 1-16) for suspending a free-standing nickel containing gas-sensing filament wherein the support structure comprises a fluoro-resistant material selected from the group consisting of polyimide, aluminum and nickel (see: col. 3, lines 55-59).

Claim Rejections - 35 USC § 103

7. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takami et al. (US Patent 4,415,877) in view of Merchant et al. (US Patent 6,100,587).

Regarding claim 33, Takami discloses a gas sensor assembly (col. 1, lines 46-52) comprising a gas-sensing filament (1) comprising a coating structure (2b) and a

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core structure (the lead wires are formed of nickel core, see abstract), wherein said coating structure comprises nickel or nickel alloy (col. 1, line 63-64 and col. 2, lines 60-64). However, Takami does not particularly disclose wherein said core structure comprises silicon carbide. Merchant discloses a barrier layer further comprising silicon carbide (col. 1, lines 42-43). It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Takami the core structure of Merchant because the barrier layer comprises silicon carbide (SiC) or silicon carbide doped by chemical vapor impregnation (CVI) with a boron-containing compound and the silicon is bonded with a metal wherein the metal may be, for example, titanium. Therefore, the above combination would provide effectively a barrier layer which is deposited onto the dielectric to inhibit the absorption of any moisture or any unwanted migration into the porous dielectric material.

Regarding claim 34, Takami further discloses it can be estimated that the electrode breakage was due to the accumulation of carbon, in both cases. The electrode indicated by specimen numbers 21 through 27 whose cover layers were formed with alloy containing less than 1% low catalytic metal by weight, deposited carbon in 100 hours which might result in the semiconductor cracks (see: col. 3, lines 67-68 and col. 4, lines 1-10, see also: col. 5, lines 10-22).

Allowable Subject Matter

8. Claims 1-32, 35-38 and 46-47 are allowable over the prior art of record.

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9. Claims 40 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

REMARKS

10. In response to applicant's argument that "Takani fails to teach any alloy containing all three of nickel, copper and aluminum" The Examiner, respectfully, disagrees with Applicant's argument because Takani discloses examples of catalytic metals which may be used in the invention are gold, silver, **nickel**, cobalt, iron, titanium and **copper** (col. 6, lines 11-14). The nickel wires are covered with an **alloy** essentially of platinum metal (col. 1, lines 63-64).

11. In response to applicant's argument that "Takani fails to teach a porous surface, the Examiner, respectfully, disagrees because the nickel containing gas filament inherently includes a porous surface.

Conclusion

12. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 12/06/07 and 01/24/08 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J M. SAINT SURIN whose telephone number is (571)272-2206. The examiner can normally be reached on Mondays to Fridays between 9:30 A.M and 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron L. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacques M SAINT SURIN/

Examiner, Art Unit 2856

May 11, 2008

/Hezron Williams/

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Supervisory Patent Examiner, Art Unit 2856